

Arthroscopic suture bridge transosseus equivalent fixation of rotator cuff tendon preserves intratendinous blood flow at the time of initial fixation.

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Abstract

BACKGROUND:

Current etiologic theories concerning healing rates in rotator cuff repair have focused on the blood supply in the tendinous portion of the cuff. We currently have little information regarding the effect of our repair techniques on this critical variable. We hypothesize that intratendinous blood flow is changed during transosseus equivalent tendon fixation.

METHODS:

Eighteen consecutive patients with rotator cuff tears amenable to double row fixation were included in the study. Each patient underwent a standard arthroscopic transosseous equivalent double row fixation procedure using the Arthrex SutureBridge technique (Arthrex, Naples, FL, USA). After tying down of the medial row, a first set of recordings was taken using a custom laser doppler flowmetry probe (Perimed, Inc., Ohio, USA). A second recording was made following securing of the lateral PushLock anchors. The data were compared to determine the overall effect on blood flow associated with this technique.

RESULTS:

Summated averages for the 2 groups show a significant (44.67%) decline in the blood flow present after the second row of implants are placed ($P < .01$). Individual calculations for regions of the cuff tear indicate significant differences in anterior third ($P = .01$), middle third ($P < .01$), and posterior third ($P = .02$) of the tear after transosseous equivalent fixation.

CONCLUSION:

Completion of the construct with lateral anchors in the transosseous equivalent technique results in reduced but preserved blood flow in the tendon repair site. Further study is required to determine the implications for tendon healing.

CLINICAL RELEVANCE:

Intratendinous blood flow is a variable that should be considered when evaluating repair methods in rotator cuff surgery.

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